

NOTES ON THE OCCURRENCE OF *PLATANATHERA INTEGRATA* (NUTT.) A.  
GRAY EX BECK (ORCHIDACEAE) IN WEST CENTRAL LOUISIANA

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ABSTRACT

*Platanthera integra* (Nutt.) A. Gray ex Beck, considered to be critically imperiled in Louisiana, was found to occur in 35% of bogs surveyed in the Kisatchie District of the Kisatchie National Forest. Limited data suggest that winter fire stimulates its growth and flowering.

KEY WORDS: *Platanthera integra*, Louisiana, Orchidaceae, Pitcher plant bog, Kisatchie National Forest

*Platanthera integra* (Nutt.) A. Gray ex Beck, the Yellow Fringeless Orchid, is considered rare (Ayensu & DeFillips 1978, Federal Register 1980, Kral 1983, Mohlenbrock 1983), although *The Official World Wildlife Fund Guide to Endangered Species of North America* does not list it (Lowe, et al. 1990). The plant is listed in the "Louisiana Special Plant List" (Natural Heritage Program 1989) as critically imperiled in the state. It is also on the Kisatchie National Forest "PETS" (proposed endangered, threatened, or sensitive species) list. The species is distributed from east Texas across the southern states to New Jersey and is limited to acid bogs and seeps (Kral 1983). A review of recent literature concerning this plant (Holmes 1983, Kral 1983, Bridges & Orzell 1989a, Luer 1975, MacRoberts 1989) has shown an acute need for information that may amplify or modify what is currently known. Our comments, based on field observations made between 1988 and 1990 mainly in the Kisatchie District of the Kisatchie National Forest, should provide additional information that will permit a more accurate assessment of this plant as rare, endangered, or threatened.

The species has been documented from Natchitoches, Beauregard, Calcasieu, St. Tammany (Holmes 1983) and, more recently, Vernon Parish (MacRoberts & MacRoberts 886 [LSUS], Annette Parker pers. comm.). Roland (1986) reports *Platanthera integra* from Lincoln Parish, upon whose authority MacRoberts (1989: 148) includes Lincoln Parish in his distribution map for *P.*

Table 1. Characteristics of bogs with *Platanthera integra*.

| Bog                     | Size<br>ha. | No. of plants |      | Burned<br>winter<br>1989-90 | Percent<br>change |
|-------------------------|-------------|---------------|------|-----------------------------|-------------------|
|                         |             | 1989          | 1990 |                             |                   |
| Frog Arrow<br>Bog Bayou | 2.6         | 135           | 310  | yes                         | +130              |
| L'Ivrogne               | 0.4         | 103           | 26   | no                          | -74               |
| Hooker                  | 0.1         | 24            | 24   | yes                         | 0                 |
| 360 B                   | 0.9         | 15            | 11   | yes                         | -27               |
| Cow (New)               | 1.6         | 8             | 23   | yes                         | +187              |
| 360 A                   | 2.2         | 2             | 3    | yes                         | +50               |
| 311                     | 1.5         | 2             | 3    | yes                         | +50               |

*integra*. Roland's voucher specimen is supposed to be in the LTU herbarium, but it could not be located there (Don Rhodes pers. comm.).

In order to obtain an estimate of the frequency of occurrence and abundance of *Platanthera integra*, in 1989 we surveyed 20 bogs in the Kisatchie District of the Kisatchie National Forest, Natchitoches Parish, during August and September, when *P. integra* is in bloom and is conspicuous. The bogs ranged from 0.1 to 3 ha and averaged 0.9 ha (see MacRoberts & MacRoberts 1988, 1990 for a description of Kisatchie bogs, and Bridges & Orzell 1989b for a description of hillside seepage bogs). In August and September 1990 we resurveyed the bogs that had *P. integra*. None had been burned in the year preceding our initial survey, but all except one were burned in the winter of 1989-1990.

Table 1 summarizes our main findings. We found *Platanthera integra* in seven (35%) of the twenty bogs surveyed. These bogs ranged from 0.1 to 2.6 ha. There appeared to be no correlation between size of bog and presence or abundance of this taxon.

The effects of fire on flowering of plants has been the subject of much recent research (e.g., Platt, *et al.* 1988). Komarek (1974) and Kral (1983) have emphasized the fire dependent nature of *Platanthera integra*. Bridges & Orzell (1989a) state that even though they made repeated visits to an area, they did not find the taxon until the area was burned. As can be seen in Table 1, most bogs burned in 1989-1990 showed an increase in *P. integra* flowering. Most spectacular were Frog Arrow and Cow (New) Bog. Bog Bayou L'Ivrogne (a.k.a. Fixit Bog) (MacRoberts & MacRoberts 1990), the only bog not burned in 1989-1990, showed a dramatic decrease from the previous year. However, since all bogs that were burned did not show an increase in *P. integra* flowering (Hooker, 360B), the effect of winter burns is not clear. However, peak blooming of all bogs that were burned was advanced by two to three weeks.

Peak blooming in 1989 was in early to middle September. In 1990 it was in middle August for all bogs except Bog Bayou L'Ivrogne, which did not bloom until early September.

*Platanthera integra* appears to be confined to bogs; the preservation of this habitat is essential to the survival of the species. However, we were struck by the uneven distribution of this species in what appears to be suitable habitat. Most bogs do not have *P. integra* and where it does occur, it is usually in fairly small numbers making it vulnerable to local extinction by random processes. However, in some localities it is very common. Of all the bogs we have surveyed in the Kisatchie District of the Kisatchie National Forest, one (Frog Arrow) has over fifty percent of all plants known for the district. Put another way, in 1989 46% and in 1990 78% of known *P. integra* in the Kisatchie District occurred in one 2.6 ha. bog. Destruction of a single bog, therefore, could result in the extinction of the majority of plants in a given area. Special management considerations should take this fact into account.

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